Amendments to the Claims:

Please cancel claims 1-27, 31, 33-48, and amend claims 28, 30 and 49 as follows. This listing of claims replaces all prior and other listing of claims.

1-27. (canceled)

28. (currently amended) A composition comprising a synthetic peptide having an amino acid sequence selected from the group consisting of:

~~AAEAYKAYKAAAAAA (SEQ ID NO: 60),~~

~~EAAAYKAYKAAAAAA (SEQ ID NO: 63),~~

EAAKYEAYKAAAAAA (SEQ ID NO: 64),

EKAKYEAYKAAAAAA (SEQ ID NO: 65),

EAKKYEAYKAAAAAA (SEQ ID NO: 66),

~~AKKEYAEYKAAAAAA (SEQ ID NO: 67),~~

~~EAPAYKAYKAAAAPA (SEQ ID NO: 83),~~

EAPKYEAYKAAAAPA (SEQ ID NO: 84),

~~EKPKYEAYKAAAAPA (SEQ ID NO: 85),~~

EAPKYEAYKAAAAPA (SEQ ID NO: 86),

~~AKPEYAEYKAAAAPA (SEQ ID NO: 87),~~

APEKAKYEAYKAAAAAA (SEQ ID NO: 88),

APEKAKYEAYKAAAAAAPA (SEQ ID NO: 89),

EKAKYEAYKAAAAAAPA (SEQ ID NO: 90),

EKPKFEAYKAAAAPA (SEQ ID NO: 91),

~~EKAKYEAYKAAAAAA (SEQ ID NO: 92),~~

EKPKVEAYKAAAAPA (SEQ ID NO: 93),

~~EKPKEEAFKAAAAPA (SEQ ID NO: 94),~~

EKAKFEAFKAAAAAA (SEQ ID NO: 95),

APEKAKFEAFKAAAAPA (SEQ ID NO: 96), and

APEKAKFEAYKAAAAPA (SEQ ID NO: 97)~~,~~

~~EAPKFEAYKAAAAPA (SEQ ID NO: 98), and~~

~~EAPKVEAYKAAAAPA (SEQ ID NO: 99)~~.

29. (original) The composition of claim 28, wherein the peptide is substantially pure.

30. (currently amended) The composition of claim 28, further comprising substitution ~~of an alanine (A) or lysine (K)~~ at position P4 by an amino acid selected from the group consisting of ~~tyrosine (Y), phenylalanine (F),~~ methionine (M), valine (V), isoleucine (I) and leucine (L).

31. (canceled)

32. (original) The composition of claim 28, wherein the peptide comprises an oligomer having a plurality of monomer units having the amino acid sequence of the synthetic peptide, the units joined by a flexible linker.

33-48. (canceled)

49. (currently amended) A method of treating a subject having a demyelinating condition, comprising: providing to the subject a composition capable of inhibiting binding of myelin basis protein (MBP) peptide to purified recombinant MHC class II DR2 molecules; wherein the composition is a peptide that comprises an amino acid sequence selected from the group consisting of: ~~AAEAYKAYKAAAAAA (SEQ ID NO: 60), EAAAYKAYKAAAAAA (SEQ ID NO: 63)~~, EAAKYEAYKAAAAAA (SEQ ID NO: 64), EKAKYEAYKAAAAAA (SEQ ID NO: 65), EAKKYEAYKAAAAAA (SEQ ID NO: 66), ~~AKKEYAEYKAAAAAA (SEQ ID NO: 67), EAPAYKAYKAAAAPA (SEQ ID NO: 83)~~, EAPKYEAYKAAAAPA (SEQ ID NO: 84), EAPKYEAYKAAAAPA (SEQ ID NO: 86), ~~AKPEYAEYKAAAAPA (SEQ ID NO: 87)~~, APEKAKYEAYKAAAAAA (SEQ ID NO: 88), APEKAKYEAYKAAAAAAPA (SEQ ID NO: 89), EKAKYEAYKAAAAAAPA (SEQ ID NO: 90), EKPKFEAYKAAAAPA (SEQ ID NO: 91), EKPKVEAYKAAAAPA (SEQ ID NO: 93), EKAKFEAFKAAAAAA (SEQ ID NO: 95), APEKAKFEAFKAAAAPA (SEQ ID NO: 96), and APEKAKFEAYKAAAAPA (SEQ ID NO: 97), wherein the subject having a demyelinating condition is treated.

50. (original) The method of claim 49, wherein the demyelinating condition is selected from the group consisting of a post-viral encephalomyelitis, a post-vaccine demyelinating condition, a multiple sclerosis, and a side effect of administering an anti-TNF agent.

51. (original) The method of claim 49, wherein the MBP peptide comprises MBP residues 85-99 as shown in SEQ ID NO: 1.

52. (original) The method of claim 49, wherein the peptide further inhibits proliferation of autoantigen-specific HLA-DR2-restricted T-cell clones.

53. (original) The method of claim 49, wherein the amino acid sequence of the peptide further comprises at least one amino acid analog substituted for an amino acid.

54. (original) The method of claim 49, wherein the amino acid sequence of the peptide comprises at least one peptide bond analog.

55. (original) The method of claim 49, further comprising formulating the composition in a pharmaceutically acceptable carrier.

56. (original) The method of claim 49, further comprising formulating the composition as a unit dose.

57. (original) The method of claim 49, wherein the MHC class II DR2 molecules are of a genotype associated with multiple sclerosis.

58. (original) The method of claim 57, wherein the MHC class II DR2 molecules are selected from the group consisting of DRB1*1501 and DRB1*1602.

59. (original) A kit comprising at least one container having a peptide capable of inhibiting binding of an immunodominant epitope of myelin basic protein to an MHC class II

DR2 protein, and instructions for use.

60. (original) The kit of claim 59, wherein the peptide is substantially pure.

61. (original) A kit comprising at least one container having a peptide as shown in claim 28, in a pharmaceutically acceptable buffer, and instructions for use.